

## COMPARISON OF COLPO-CYSTO-DEFECOGRAM VERSUS TRANSLABIAL 3D/4D ULTRASOUND IN PATIENTS WITH POSTERIOR COMPARTMENT PROLAPSE

### Hypothesis / aims of study

So far the golden standard for evaluating the central and posterior compartment has been the colpo-cysto-defecogram. This investigation is costly, unpleasant and involves radiation exposure. At present there are internationally no uniform rules for classification of for peritoneo/enterocele and or rectocele and several studies show the lack of association between symptoms and findings at radiological and clinical examination (1).

Real time imaging of the pelvic floor with 3D/4D transperineal ultrasound provides the possibility to perform an objective, reliable and non-invasive method to investigate pelvic floor anatomic abnormalities(2). This study was designed to assess the level of agreement in diagnosing clinically anatomic abnormal conditions such as enterocele and or rectocele between these investigations in patients complaining of posterior compartment prolapse.

### Study design, materials and methods

114 Patients referred to our third referral centre for treatment of pelvic organ prolapse underwent an interview, clinical examination, colpo-cysto-defecography (CCD) and transperineal 3D/4D ultrasound.

Colpo-cysto-defecography was performed using a standardized technique, with images acquired at rest, valsalva and straining. The procedure was videotaped. 3D/4D Transperineal ultrasound was performed in supine position and after voiding using a GE Kretz Voluson 730 Expert system and a RAB 4-8 MHz probe. Volumes were obtained at rest, on pelvic floor contraction and on Valsalva manoeuvre. Analysis of these datasets was undertaken using the software GE Kretz 4D view. Off line analysis was performed with two investigators blinded against the results of the other method.

Posterior compartment prolapse was defined if point Bp and or point D of the ICS POPQ scoring system for pelvic organ prolapse was  $\leq 2$ . Enterocele was considered clinically relevant if there was a herniation of bowel of more than halfway the vagina into the rectovaginal septum. Rectocele was considered clinically relevant if there was a defect of the rectovaginal septum of more than 30 mm measured on CCD and more than 10 mm on ultrasound, seen as a sharp discontinuity in the ventral anorectal muscularis.

### Results

54 Patients were diagnosed with a posterior compartment prolapse. 2 Data sets were excluded due to bad imaging quality leaving 52 patients for comparison. On CCD enterocele was diagnosed in 24 patients (46%) as in 30 patients (58%) on transperineal ultrasound. For enterocele the Cohen's Kappa between CCD and ultrasound was 0.57. In 91% there was a positive agreement between the methods for the diagnosis of an enterocele, with a negative agreement in 67% of the cases.

Clinically relevant rectocele was found in 22 patients (46%) on CCD and in 22 patients on ultrasound (46%). For rectocele Cohen's Kappa was 0.44. Positive agreement between the investigations for rectocele was found in 68%, with a negative agreement in 77%.

### Interpretation of results

Preoperative assessment requires skills and usually involves invasive methods for detecting pelvic floor disorders such as MRI or Cysto-colpo-defecography/defecogram (CCD) or non invasive methods such as 3D/4D transperineal ultrasound. Both methods can detect anatomical abnormalities such as enterocele and or rectocele. It is of clinical importance to differentiate between enterocele and rectocele in regards to the surgical management of the patient. This study showed that in 91% enterocele diagnosed on CCD was confirmed on ultrasound and no enterocele in 67% of the cases, with a level of agreement of 0.57. Only in 68% there was a positive correlation for the diagnosis of rectocele, for negative finding the correlation was in 77% of the cases. For rectocele the Cohen's Kappa was 0.44.

With a lack of uniform rules for classification enterocele and or rectocele on CCD the results of this study are not surprising. However we found a moderate level of agreement between the both methods for the diagnosis enterocele and rectocele with in 91% of the patients enterocele diagnosis found on CCD confirmed on ultrasound. Further improvement of standardization of both methods will probably be necessary to improve the results.

### Concluding message

This study found a moderate agreement for diagnosing enterocele and or rectocele between CCD and 3D/4D transperineal ultrasound. It could be considered to use 3D/4D transperineal ultrasound as first non invasive diagnostic tool for detection anatomical abnormalities of the posterior compartment. If there are discrepancy between the clinical findings and the result of the transperineal ultrasound or further investigation as Colpo-Cysto-Defecography or dynamic MRI will still be necessary.

### References

1. International Journal of Colorectal Disease, 2004. 19(1): 60-67
2. Ultrasound in Obstetrics & Gynecology, 2005. 26: 73-77.

**FUNDING:** no source of funding or grant was obtained

**HUMAN SUBJECTS:** This study was approved by the UZ Gasthuisberg, Leuven, Belgium and followed the Declaration of Helsinki Informed consent was not obtained from the patients.